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National Academy of Sciences, Constitution and Membership. Washington, 1882. From the society.

Cacao: How to Grow and how to Cure it. By D. Morris. M.A. Kingston, Jamaica, 1882. From the author.

Über eine neue Eremias-Art aus dem Thal des Krododil-flusses in Transvaal. Von Dr. Franz Steindachner. Aus dem LXXXV Bande der Sitzb. der k. Akad. der Wissensch., 1 Abth., 1882. From the author.

Batrachologische Beiträge. Von Dr. Franz Steindachner. Aus dem LXXXV Bande der Sitzb. der k. Akad. der Wissensch., 1882. From the author.

The Channel Tunnel. By Professor Boyd Dawkins, M.A. Ext. from the Trans. Manchester Geological Society, 1882. From the author.

The American Journal of Forestry. Edited by Franklin B. Hough. Cincinnati, Oct., 1882. From the editor.

Notice sur les espèces du genre *Philothamnus*, qui se trouvent au Muséum de Lisbonne. Par J. V. Barboza de Bocage; also, by the same author: Aves das possessões portuguezas da Africa occidental; and Liste des Mammifères envoyés de Caconda (Angola) par M. D'Anchieta. Extracto de Jornal de Sciencias Mathematicas, Physicas e Naturaes, Ne XXXIII. Lisboa, 1882. From the author.

Descriptions of ten new species of *Monticulipora* from the Cincinnati group, Ohio. Index, etc. By U. P. James. Cincinnati, 1882. From the author.

Jamaica. Annual Report of the Public Gardens and Plantations for the year ending 30th Sept., 1881. By D. Morris, director. Kingston, Jamaica, 1882. From the author.

Beiträge zur Paläontologie Oesterreich-Ungarns, und des Orients, herausgegeben Von E. v. Mojsisovics und M. Neumayr. Wien, 1882. Der jungtertiäre Fisch-fauna Croatiens. Von Drag. Kramberger-Gorjanovic. Beiträge zur Kenntniss der fossilen Diatomeen Oesterreich-Ungarns. Von A. Grunow.

Brief mention of some of the men who aided in developing the science of geology in America. Descriptions of three new species of fossils, and remarks upon others. By S. A. Miller. Description of a new species of *Bourguetocrinus*. By P. de Loriol, etc., etc. From the Jour. Cin. Soc. Nat. Hist., Oct., 1882. From S. A. Miller.

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GENERAL NOTES.

BOTANY.¹

NEW SPECIES OF NORTH AMERICAN FUNGI.—*Diplodia Pyri* E. and M.—Spots, light brown, small, border nearly obsolete; perithecia black, scattered, mostly epiphyllous; spores oval, brown, $24-25 \times 9-12 \mu$. On living lvs. of *Pyrus malus*. Newfield, N. J., Sept., 1882.

Septoria Silenes E. and M.—Spots small, light yellow; perithecia brownish-yellow, soft, innate, scattered, 56μ . diam.; spores yellowish, cylindrical, curved, triseptate, $48 \times 3 \mu$. On living leaves of *Silene stellata*, Chester Co, Pa. Dr. Martin.

Septoria psilostega E. and M.—Spots golden yellow, mostly occupying the margin of the leaf; perithecia hypophyllous, scattered, yellow, very delicate, exuding a mass of amber colored spores which viewed separately are subhyaline, filiform, straight or curved, faintly triseptate, $60 \times 3 \mu$. On lvs. of *Galium pilosum*.

Septoria Smilacinae E. and M.—Spots gray, oblong, border broad, dark-pink; perithecia light-brown, conoid, mostly epiphyll-

¹Edited by PROF. C. E. BESSEY, Ames, Iowa.

lous, $114 \times 3 \mu$.; spores hyaline, filiform, guttulate, $63-114 \times 3 \mu$. On lvs. of *Smilacina*, Chester Co., Pa. July, 1882.

Septoria Symploci E. and M.—Spots white, $1-1\frac{1}{2}^{\text{mm}}$ diam. border brown and a little raised; perithecia brown, subglobose, hypophyllous, semi-immersed, scattered irregularly, 112μ . diam.; spores hyaline, cylindric-clavate, spuriously 2-3 septate, curved, $24-30 \times 3 \mu$. On fading leaves of *Symplocos tinctoria*. Green Cove Springs, Fla., Feb., 1882. Dr. Martin. Differs from *S. stigma* B. and C. in its longer spores.

Septoria lepidiicola E. and M.—Spots pallid, subregular, $\frac{3}{4}^{\text{mm}}$ diam., perithecia dark-chestnut color, crowded, 74μ diam. spores hyaline, cylindrical, slightly curved, ends obtuse, guttulate or septate, $24-33 \times 2\frac{1}{2}-3 \mu$. On living leaves of *Lepidium Virginicum*, W. Chester, Pa., June, 1882. *S. Lepidii* Desm. has ovate spores $6-8 \times 4-6 \mu$.

Septoria lactucicola E. and M.—Perithecia punctiform, minute, scattered, on brown, concentrically wrinkled spots, $\frac{1}{2}-1\frac{1}{2}$ centim. diam. spores filiform, mostly curved $25-30 \mu$. long. On living lvs. of *Lactuca Canadensis*. Newfield, N. J., Sept., 1882. Quite different from *S. Lactucæ* Pass.

Phyllosticta clethricola E. and M.—Perithecia amphigenous, erumpent, on pale-brown spots $2-10^{\text{mm}}$ diam. Spores subhyaline, guttulate, ovate $9 \times 6 \mu$. On lvs. of *Clethra alnifolia*. Newfield, N. J., Sept., 1882.

Phyllosticta bataticola E. and M.—Perithecia few, minute, black, on small, white, round spots with a purplish border; spores oblong-elliptical $5 \times 2 \mu$. On lvs. of *Batatas edulis*. Newfield, N. J., Sept., 1882. *S. Batatas* Cke. has larger brown perithecia on much larger spots and has rather larger spores.

Phyllosticta Orontii E. and M.—Perithecia brown, epiphyllous, 56μ . diam. on large yellow spots with an indefinite border; spores ovate, $6 \times 2\frac{1}{2} \mu$. On lvs. of *Orontium aquaticum*.

Phyllosticta iolani E. and M.—Spots light-brown, border a little darker; perithecia black, innate, amphigenous, upper portion deciduous, 90μ . diam., spores sub-hyaline, oblong $9 \times 2 \mu$. On lvs. of some *Solanum*. Lexington, Ky., Aug., 1882. Professor W. A. Kellerman.

Phyllosticta toxica E. and M.—Spots gray, round, small, border dark-brown; perithecia black, epiphyllous, innate, 70μ . diam., spores sub-hyaline, nearly globose, granular, $6-7\frac{1}{2} \mu$. On fading lvs. of *Rhus Toxicodendron*. Decorah, Iowa. E. W. Holway.

Ascochyta Smilacis E. and M.—Spots pallid, round, border brown; perithecia black, globose, innate, epiphyllous, 140μ . diam. spores sub-hyaline, ovate, triseptate, $11-22 \times 6-7 \mu$. On lvs. of *Smilax rotundifolia*. Concord, Pa.

Glæosporium Betularum E. and M.—Spots light-brown, nearly round, $2-3^{\text{mm}}$ diam., border dark; pustules brown, amphigenous, $120-140 \mu$., falling out and leaving a dark cup-shaped scar; con-

idia hyaline, obovate and ovate, $9-10\frac{1}{2} \times 6 \mu$, hyphæ hyaline. On lvs. of *Betula nigra* and *B. lenta*. Bethlehem, Pa., Sept., 1882. E. A. Rau. Differs from *G. Betulæ* Mont., and *G. betulinum* Kickx., in its ovate conidia.

Macrosporium Solani E. and M.—Hyphæ brown, erect, somewhat curved, caespitose, septate, $50-70 \times 3-4\frac{1}{2} \mu$; conidia brown, oblong-obovate, pedicellate, endochrome divided by transverse and longitudinal septa; pedicel hyaline, septate above; conidia, including pedicel, $100-140 \mu$. long by $15-18 \mu$. wide. Growing mostly on the under surface of eroded spots and faded portions of the dying leaves of *Solanum tuberosum*. Newfield, N. J.

Macrosporium Catalpæ E. and M.—Hyphæ brown, curved, nodulose, 8-12 septate, erect, amphigenous, $90-135 \times 6 \mu$; conidia brown, obovate and pyriform, sub-muriform, $27-54 \times 15-27 \mu$. On brown spots on the lvs. of *Catalpa bignonioides*. Bethlehem, Pa., Oct. 1882. E. A. Rau.

Macrosporium herculeum E. and M.—Amphigenous, on dark gray, round spots; hyphæ erect, brown, caespitose, flexuous, sparingly septate, $70-80 \times 5 \mu$; conidia brown, clavate, multiseptate with a few imperfect longitudinal septa, $200-225 \times 21-26 \mu$. On lvs. of *Nasturtium Armoracia*. Newfield, N. J.

Cercospora canescens E. and M.—Spots brown, border yellowish-brown, broad and irregular; hyphæ caespitose, brown, $110 \times 6 \mu$, conidia, hyaline, cylindric-clavate, 5-8 septate $117 \times 6 \mu$. On fading leaves of *Phaseolus*. In gardens.

Cercospora flagellare E. and M.—Spots pallid, $\frac{1}{2}-\frac{3}{4}$ cent. diam., sometimes confluent; hyphæ tufted, brown, crooked and nodulose $75-80 \times 4 \mu$, bearing at their tips the long, $80-112 \times 4 \mu$, slender conidia, attenuated above, and 8-10 septate. Amphigenous, but more perfectly developed on the under side of the leaf. On lvs. of *Phytolacca decandra*.

Cercospora Echinocystis E. and M.—Hyphæ brown, fasciculate, scarcely septate, hypophyllous $42 \times 4 \mu$ on white round, indefinitely bordered spots; conidia hyaline, cylindrical, clavate, $80-105 \times 3 \mu$, 3-6 septate. On lvs. of *Echinocystis lobata*. Lexington, Ky., Professor W. A. Kellerman.

Cercospora Dioscoreæ E. and M.—Hyphæ caespitose, brown, scarcely septate, hypophyllous, $30 \times 3\frac{1}{2} \mu$; conidia sub-hyaline, cylindrical, 3-8 septate, $54-90 \times 4-5 \mu$. The upper surface of the leaf is mottled with dark-brown spots with a yellow border, but the fungus is found on the under surface. On lvs. of *Dioscorea villosa*. Chester Co., Pa.

Ramularia Plantaginis E. and M.—Spots small, round, light-gray, border reddish-brown; hyphæ caespitose, hypophyllous, hyaline; conidia, cylindrical, $15-21 \times 3-4\frac{1}{2} \mu$. On lvs. of *Plantago major*. Kentucky, Professor W. A. Kellerman.

Ramularia Celastri E. and M.—Spots small, white, border dark-brown; hyphæ sub-hyaline, fasciculate, $24 \times 3 \mu$; conidia oblong-

cylindrical, hyaline, guttulate, uniseptate, $18-21 \times 3 \mu$. On lvs. of *Celastrus scandens*. Chester Co., Pa.

Oospora Tulipiferæ E. and M.—Hyphæ subhyaline, becoming brown, septate, caespitose, $42 \times 3 \mu$, on light-brown spots, with a dark, narrow border; conidia subhyaline, ovate or fusiform-concatenate, borne on the tips of the hyphæ, $7-9 \times 3-4\frac{1}{2} \mu$. On lvs. of *Liriodendron*. West Chester, Pa., Dr. Martin, and Bethlehem, Pa., E. A. Rau, Sept. and Oct. Common.—*J. B. Ellis*, *Newfield*, *N. J.*, and *Dr. G. B. Martin*.

CUT-LEAVED BEECH.—Miss Kate Furbish sends tracings (here reproduced one-third natural size) of some pinnately lobed leaves of the beech, taken from a tree at Chesterville, Me. Dr. Packard found similar leaves at Brunswick, Me. The latter we have ex-



Pinnately lobed Beech leaves.

amined, and find that the lobing is due to the early breaking down of the parenchyma midway between the veins, the growth of the rest of the leaf tissue continuing in the usual way. Probably Miss Furbish's specimens were produced in the same manner.

AGENCY OF WATER IN FOREST DESTRUCTION.—The note in reference to the discussion of this topic before the Philadelphia Academy (see p. 622, July number, *AM. NAT.*) is correct, so far as it goes, and yet from its brevity possibly gives a very different impression of the facts than actually occurred.

The discussion arose from a letter read from Professor Sheaffer, of Pottsville, detailing a case where a large area of forest was destroyed by the construction of a beaver dam. Mr. Meehan simply gave instances of a similar character, where, by the formation of railroad embankments, immense areas of forests had been destroyed, and geological instances from now treeless prairies, in which buried forests had evidently been destroyed by water. He incidentally referred to his former addresses before the Academy,

on the washing away of the soil on the tops of high mountains, and the relation of the "timber line" to these facts, and suggested that in theories of the disappearance of forests both in the past and in the present, the agency of water as well as of climate should not be overlooked. It was not this that Professors Leidy, Heilprin, Koenig, and Redfield opposed, but in their experience they had found that so far as the question of the "timber line" was concerned, climatic influences had as much, if not more to do in deciding it, than the mere washing away of the soil by rains or melting snows.—*Thomas Meehan, Germantown, Pa.*

ON THE HETERŒCISM OF THE UREDINÆ.—Charles B. Plowright recorded last year in the December number of *Grevillea*, the results of a series of experiments upon the barberry cluster cup (*Æcidium berberidis*) and wheat rust (*Puccinia graminis*), which led him to "differ from the eminent botanists abroad who do accept the heterœcism of *Puccinia graminis* as established beyond question." This year he made another series of experiments, the results of which he gives in the September *Grevillea* as follows: "This year another series of cultures was instituted, in which the promycelium spores [sporidia] of *Puccinia graminis* were sown upon young barberry plants, with the unvarying result of producing the *Æcidium*, the check plants remaining free from the fungus. Young wheat plants, which were kept continuously covered by bell glasses from the time they were first sown till the experiment was concluded, were also found, when infected with ripe *Æcidium berberidis* spores, to become infected with *Uredo*, while similar plants not so infected remained healthy."

The experiments were so conclusive that Mr. Plowright, who entered upon them "biassed against" the doctrine of heterœcism, now fully accepts it.

NOTE ON GERARDIA.—It may be worth recording that *Gerardia pedicularis* L., although blooming profusely about Providence this season, yet owing, perhaps, to the long-continued drouth, is not nearly so much frequented by humble-bees as usual. Indeed, I notice more honey-bees about the plants. The consequence is, that much fewer flowers are perforated in the manner I have before described. In a half hour's careful observation I did not see one humble-bee avail himself of the holes already cut, nor make a new perforation. All entered by the open mouth of the corolla. There would seem then to be no necessary impediment to their means of ingress. Does not the diminished number of seekers account for the legitimate action of the few? Absence of active competition renders it unnecessary for the remaining bees to adopt a burglarious habit.—*W. W. Bailey, Brown University, Sept. 4, 1882.*